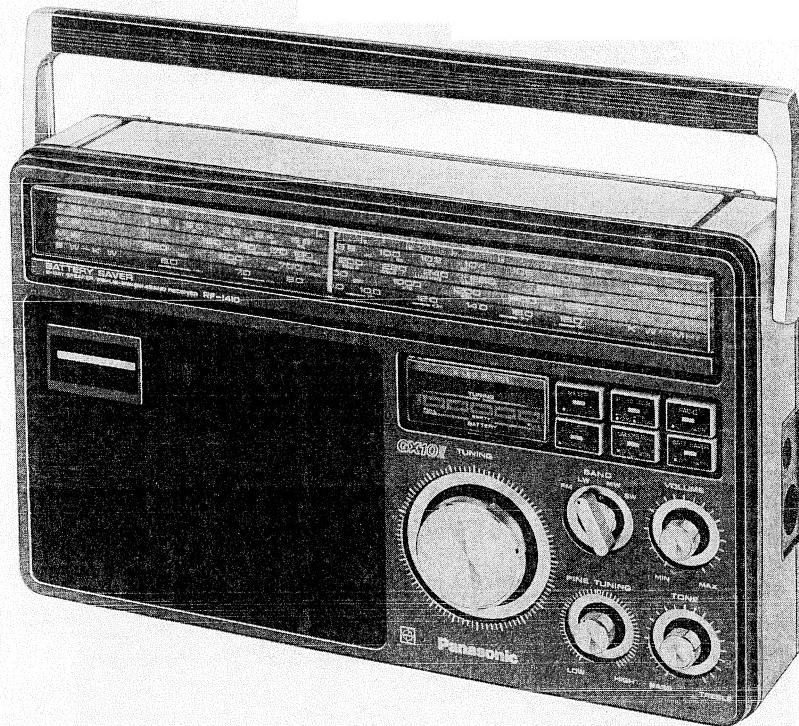


Service Manual

Radio
RF-1410LBS

**FM/LW/MW/SW 4-BAND
PORTABLE RADIO**



■ SPECIFICATIONS

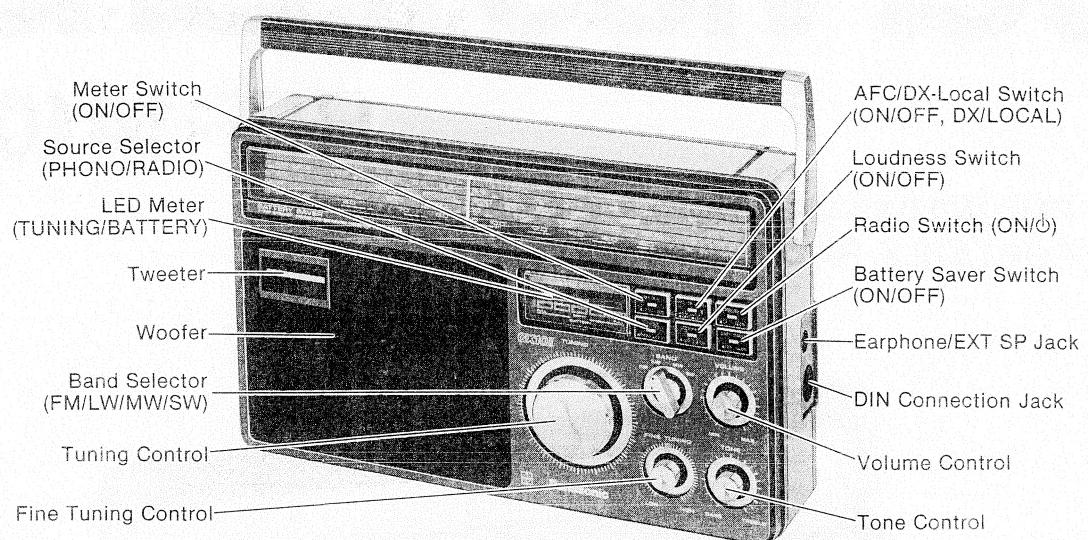
Frequency Range:	FM 87.5~108 MHz LW 150~285 kHz (2000~1060 m) MW 525~1610 kHz (571~186 m) SW 5.9~18 MHz (50.8~16.7 m)	Power Consumption: Speakers: 7W at 120V (AC Only) Woofer; 12cm (5") PM Dynamic Speaker
Intermediate Frequency:	FM 10.7 MHz AM (LW, MW & SW) 455 kHz	Tweeter; 3cm (1-3/16") PM Dynamic Speaker
Sensitivity:	FM 1.6µV for 50mW Output LW 60µV/m for 50mW Output MW 30µV/m for 50mW Output SW 6µV for 50mW Output	Dimensions: 11-3/8"(Wide)×7"(High)×3-3/16" (Deep) (289×177×80)mm
Power Source:	AC 110~125/220~240V 50/60Hz or DC 7.5V (Five "D" Size Flashlight Batteries) (National UM-1 or equivalent)	Weight: 4 lb. 6.5 oz. (2kg) without batteries
		Impedance: Speaker 8Ω Earphone Jack 8Ω

Specifications are subject to change without notice.

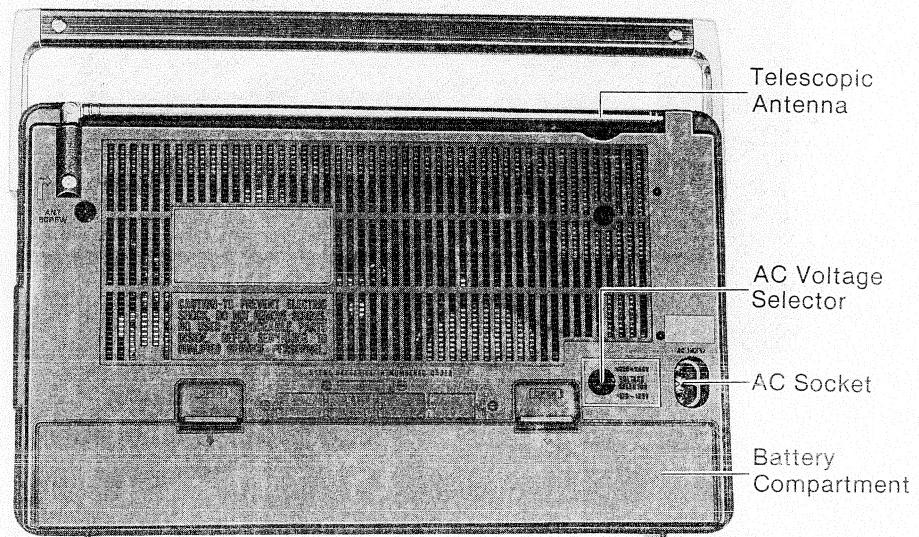
 **Panasonic**

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

LOCATION OF CONTROLS AND COMPONENTS

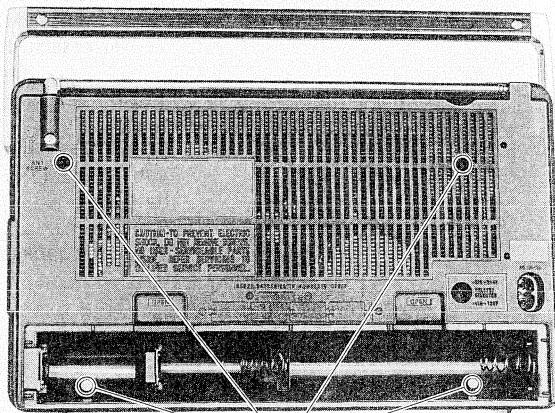
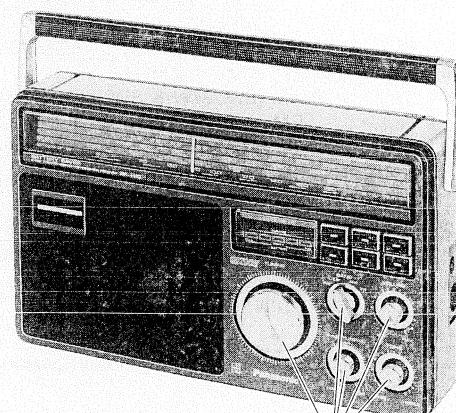


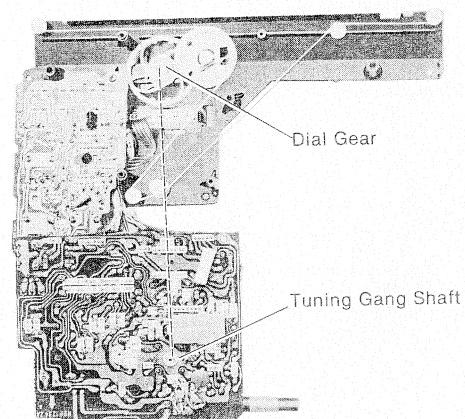
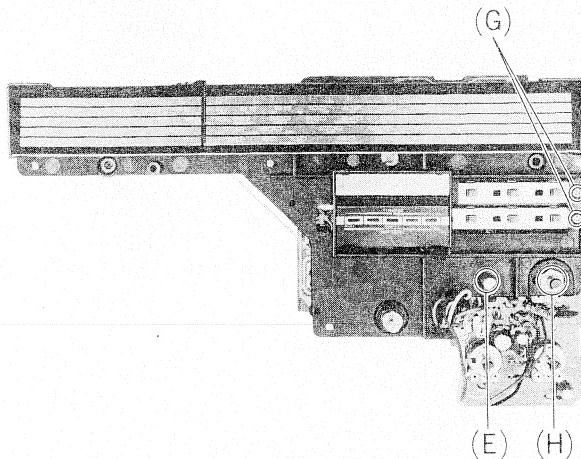
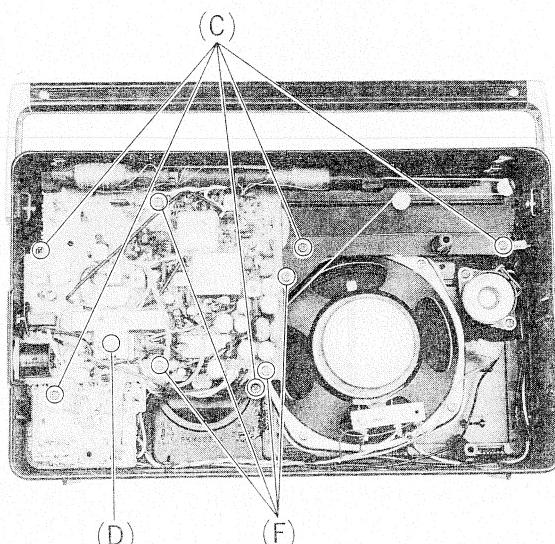
[Fig. 1]



[Fig. 2]

DISASSEMBLY INSTRUCTION

(A)
[Fig. 3](B)
[Fig. 4]

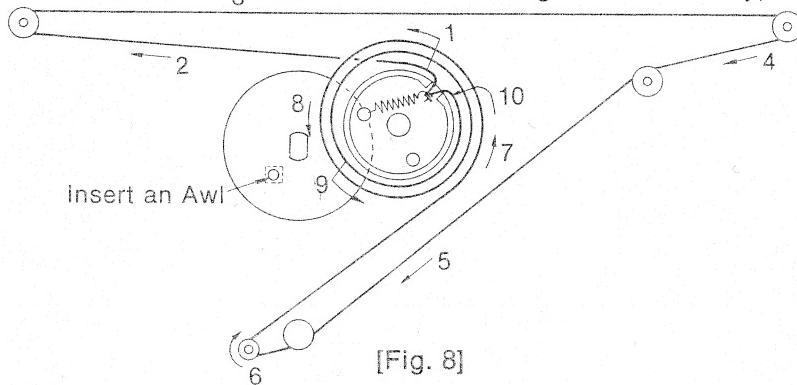


Procedure	To remove —.	Remove —.	Shown in Fig. —.
1	Chassis	Screws (3×35)(A)×4	3
2		Knobs(B)×5	4
3		Red Screws (3×12)(C)×5	5
4		Circlip(D)×1	5
5		Band Switch Shaft(E)×1	6
6	Printed Circuit Board	Screws (3×10)(F)×4	5
7		Screws (3×6)(G)×2	6
8		Nut (8φ)(H)×1	6

Notes:

Turn tuning gang shaft to fully counter-clockwise.

Insert the tuning gang shaft in the hole of dial gear as shown in fig. 7.

DIAL THREADINGCord length is 140cm (55 $\frac{1}{8}$ ')

ALIGNMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

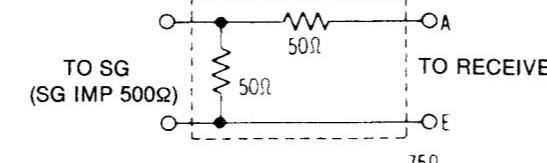
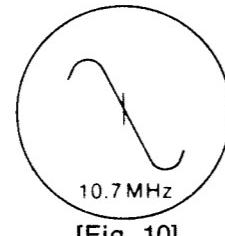
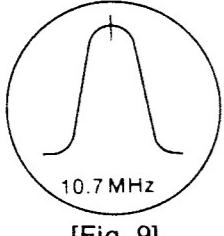
1. Set radio switch to ON.
2. Set volume control to maximum.
3. Set tone control to treble.
4. Set band switch to MW, LW, SW or FM.
5. Set meter switch to OFF.
6. Set AFC/DX-LOCAL switch to DX (AM) and OFF (FM).
7. Set source selector to radio.
8. Set loudness switch to OFF.
9. Set power source voltage to 7.5V DC.
10. Output of signal generator should be no higher than necessary to obtain an output reading.

■ LW, MW, AND SW ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
AM IF ALIGNMENT						
(1) MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455kHz 30% Mod. at 400Hz	Point of non-interference.	Output meter across voice coil.	T2 (AM 1st IFT) T3 (AM 2nd IFT)	Adjust for maximum output.
LW-RF ALIGNMENT						
(2) LW	"	145kHz	145kHz [19mm(3/4")]	Output meter across voice coil.	L8 (LW OSC Coil) (*1) L5 (LW ANT Coil)	Adjust for maximum output. Adjust L5 by moving coil bobbin along ferrite core.
(3) LW	"	285kHz	285kHz [160mm(65/16")]	"	CT3 (LW OSC Trimmer) CT1 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
(*1) Cement antenna bobbin with wax after completing alignment.						
MW-RF ALIGNMENT						
(4) MW	"	550kHz	550kHz [19mm(3/4")]	Output meter across voice coil.	L9 (MW OSC Coil) (*2) L6 (MW ANT Coil)	Adjust for maximum output. Adjust L6 by moving coil bobbin along ferrite core.
(5) MW	"	1,500kHz	1,500kHz [160mm(65/16")]	"	CT8 (MW OSC Trimmer) CT7 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
(*2) Cement antenna bobbin with wax after completing alignment.						
SW-RF ALIGNMENT						
(6) SW	Connect to test point 1 through ceramic capacitor (10PF). Negative side to test point 2 .	5.9MHz	5.9MHz [11mm(7/16")]	Output meter across voice coil.	L10 (SW OSC Coil) L7 (SW ANT Coil)	Adjust for maximum output.
(7) SW	"	18MHz	18MHz [168mm(65/8")]	"	CT4 (SW OSC Trimmer) CT2 (SW ANT Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).

■ FM IF ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
(1) FM	Connect to test point 3 through 0.001μF. Negative side to point 2 .	10.7MHz	Point of non-interference.	Connect vert. amp of scope to test point 5 . Negative side to test point 2 .	T1 (FM 1st)	Adjust for maximum amplitude. (Refer to Fig. 9.)
(2) FM	"	"	"	"	T4 (FM 2nd)	Adjust for maximum amplitude. (Refer to Fig. 10.)



[Fig. 11] FM Dummy Antenna

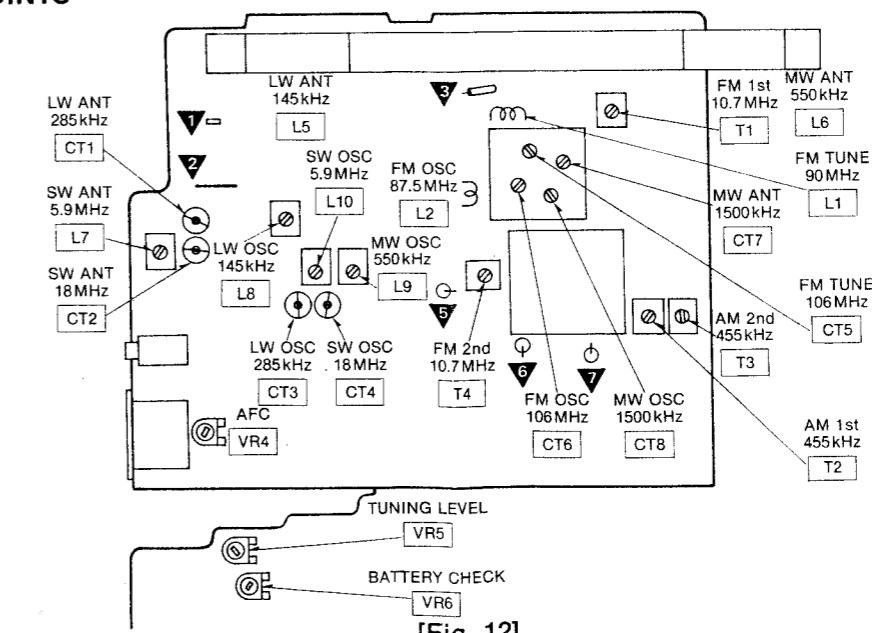
■ AFC, METER ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	AC VTVM	DC VTVM	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY					
AFC ALIGNMENT							
(1) FM	↓ ... +	98MHz (10~15dB)	Tune to signal (AFC switch... ON)	Output meter across voice coil.	—	VR4	1. Set AFC switch to OFF. 2. Adjust VR4 for maximum output.
TUNING LEVEL ADJUSTMENT							
(2) FM	—	—	Tune to signal.	—	—	VR5	1. Turn VR6 to fully clockwise. 2. Adjust signal generator for 0.65~0.7V reading on DC VTVM. 3. Adjust VR5 so that 2nd LED begins to fade away.
BATTERY CHECK							
(3) FM	—	—	—	—	—	VR6	1. Set power source voltage to DC 4.5V. 2. Adjust VR6 so that 2nd LED begins to fade away.

■ FM RF ALIGNMENT

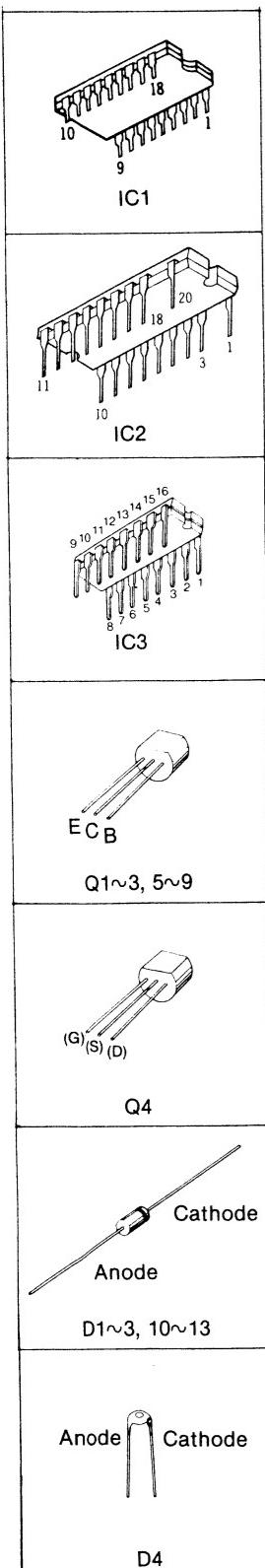
BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
(1) FM	Connect to test point 1 through	87.5MHz	Variable capacitor fully closed.	Output meter across voice coil.	L2 (FM OSC Coil)	(*3) Adjust for maximum output.
(2) FM	through FM dummy antenna. (Refer to fig. 11).	90MHz [21mm(27/32")]	—	—	L1 (FM TUNE Coil)	(*3) Adjust for maximum output.
(3) FM	—	106MHz [150mm(529/32")]	—	—	CT6 (FM OSC Trimmer) CT5 (FM TUNE Trimmer)	(*3) Adjust for maximum output. Repeat steps (1)~(3).
(*3) Three output responses will be present; proper tuning is the center frequency.						

■ ALIGNMENT POINTS



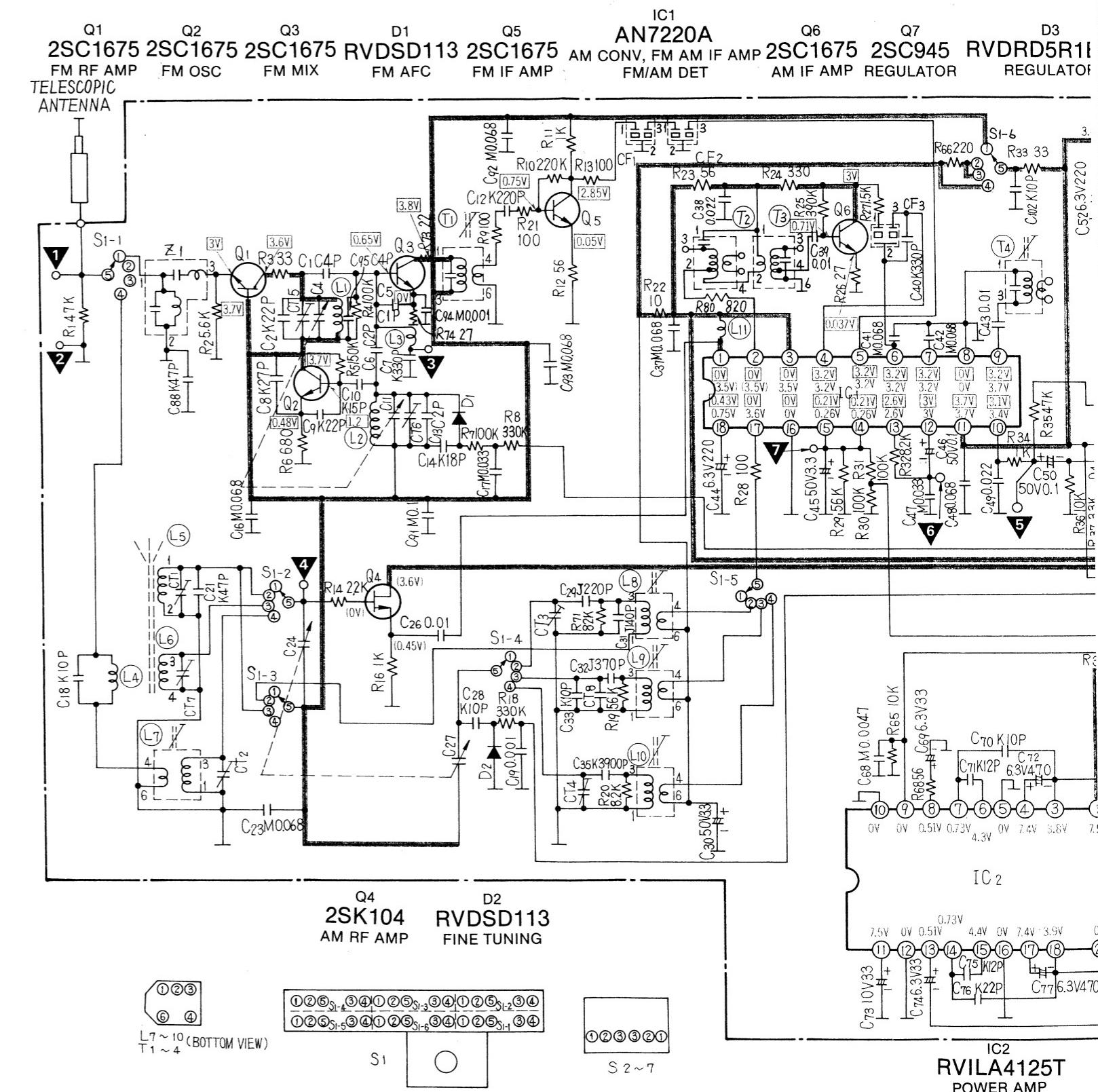
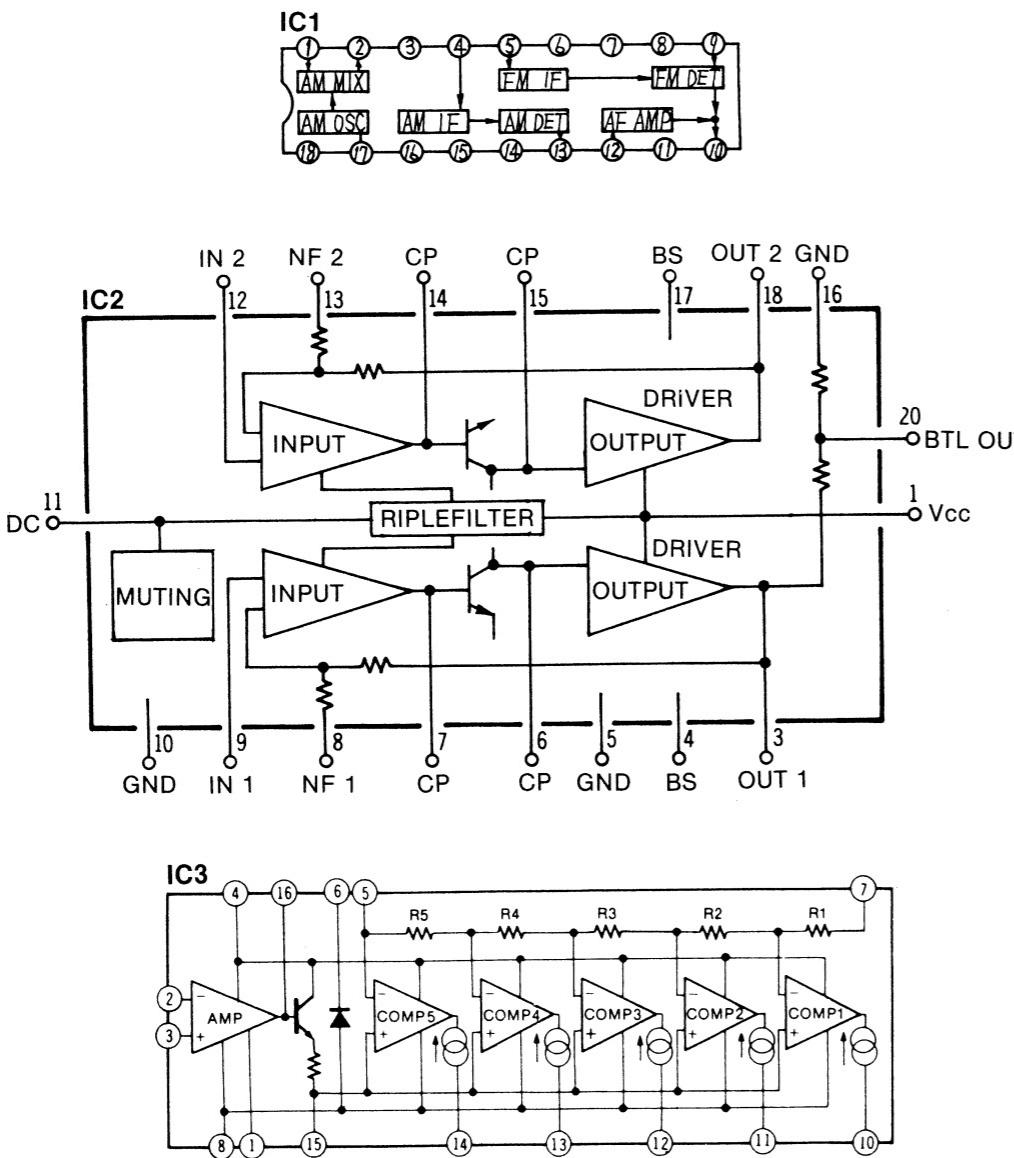
[Fig. 12]

SCHEMATIC DIAGRAM MODEL

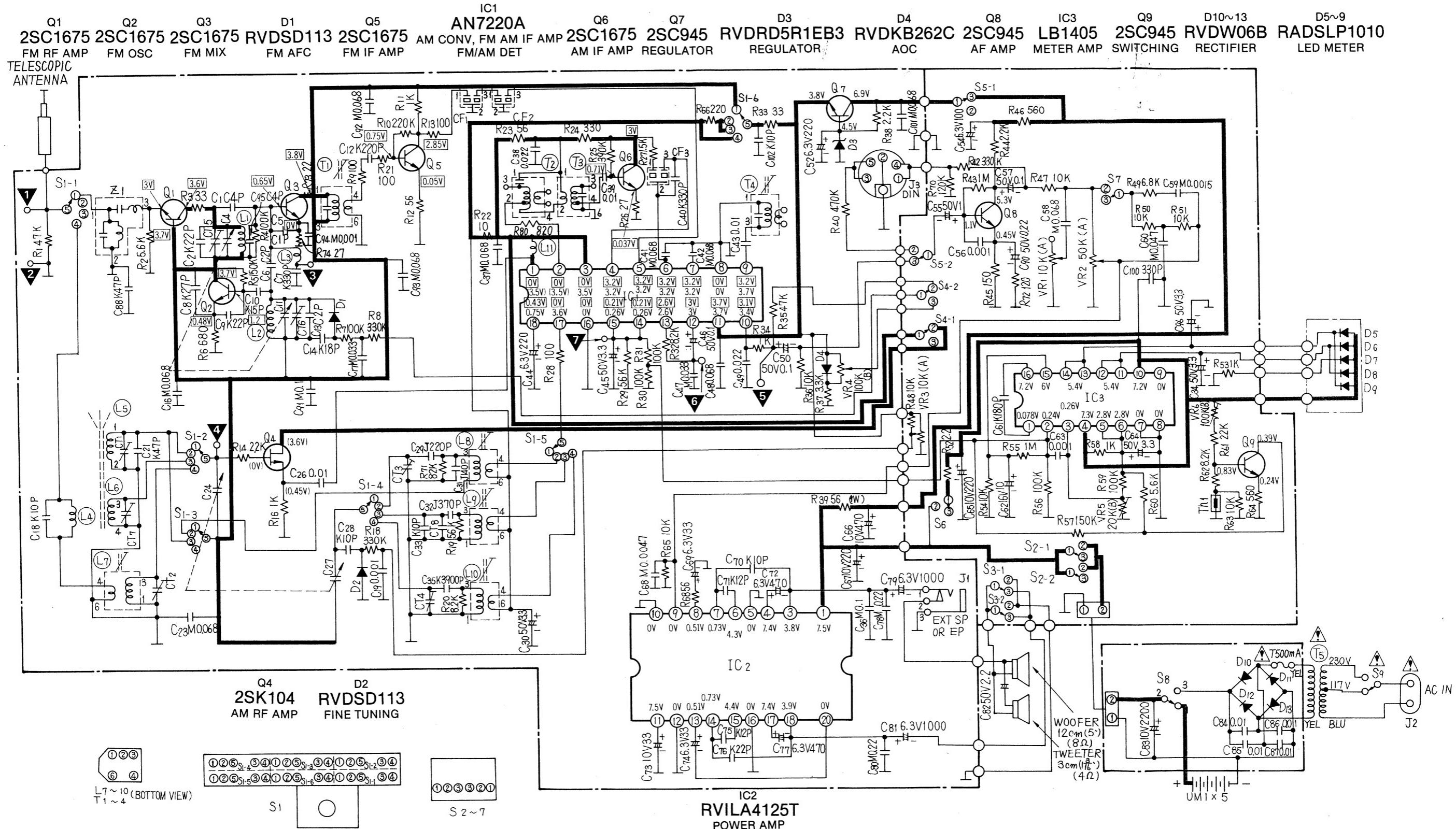


Notes:

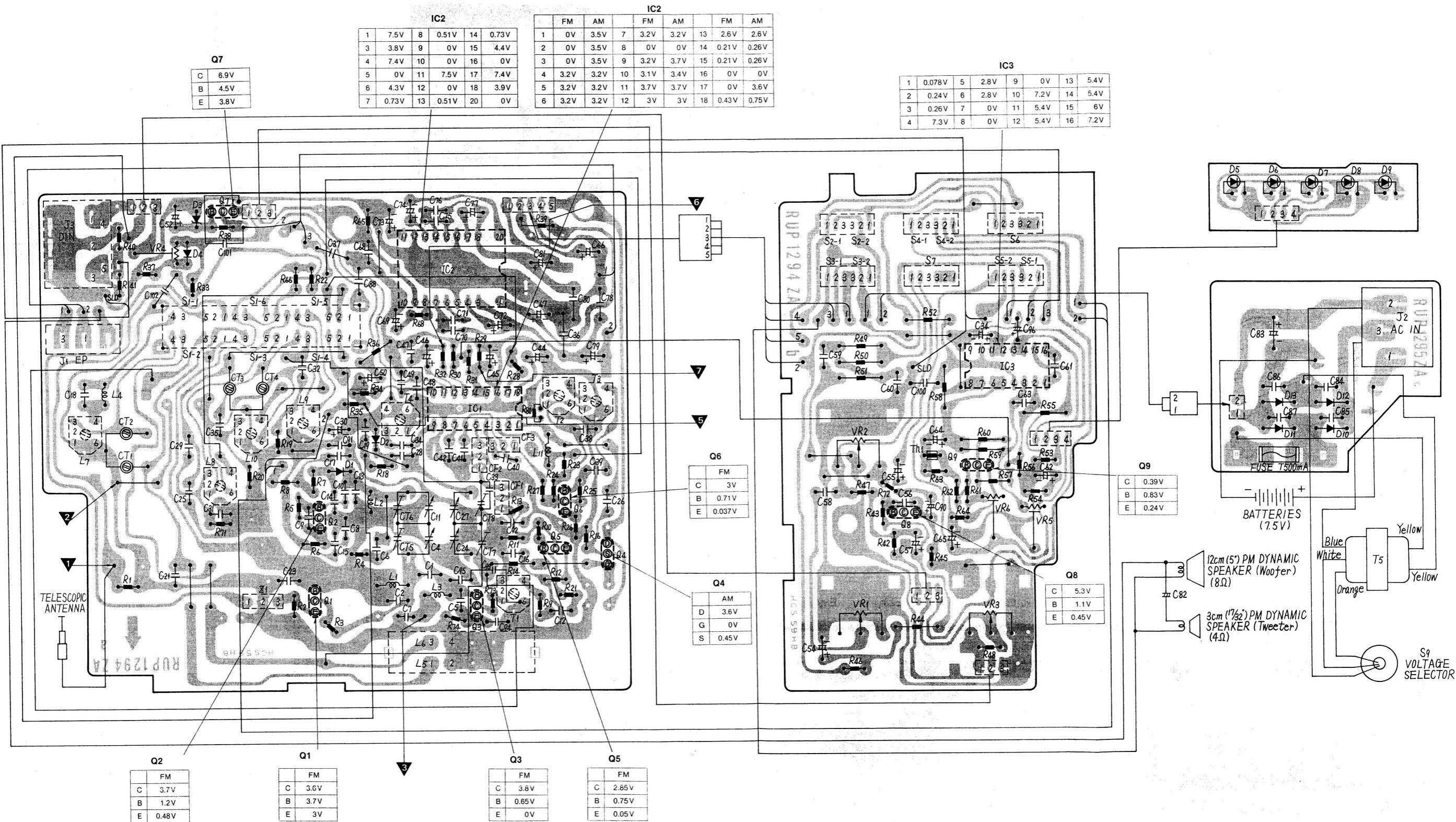
1. S1-1~S1-6: Band switch in "FM" position.
(1...FM, 2...LW, 3...MW, 4...SW)
2. S2-1, S2-2: Radio switch in "OFF" position.
(2...ON, 3...OFF)
3. S3-1, S3-2: Battery saver switch in "OFF" position.
(2...ON, 3...OFF)
4. S4-1, S4-2: AFC/DX-local switch in "ON/DX" position.
(2...ON/DX, 3...OFF/LOCAL)
5. S5-1, S5-2: Source switch in "RADIO" position.
(2...PHONO, 3...RADIO)
6. S6: Meter switch in "OFF" position.
(2...ON, 3...OFF)
7. S7: Loudness switch in "OFF" position.
(2...ON, 3...OFF)
8. S8: AC/DC switch in "DC" position.
9. S9: Voltage selector.
10. DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
11. FM position: No signal 47mA
Maximum output 530mA
12. Δ indicates that only parts specified by the manufacturer be used for safety.



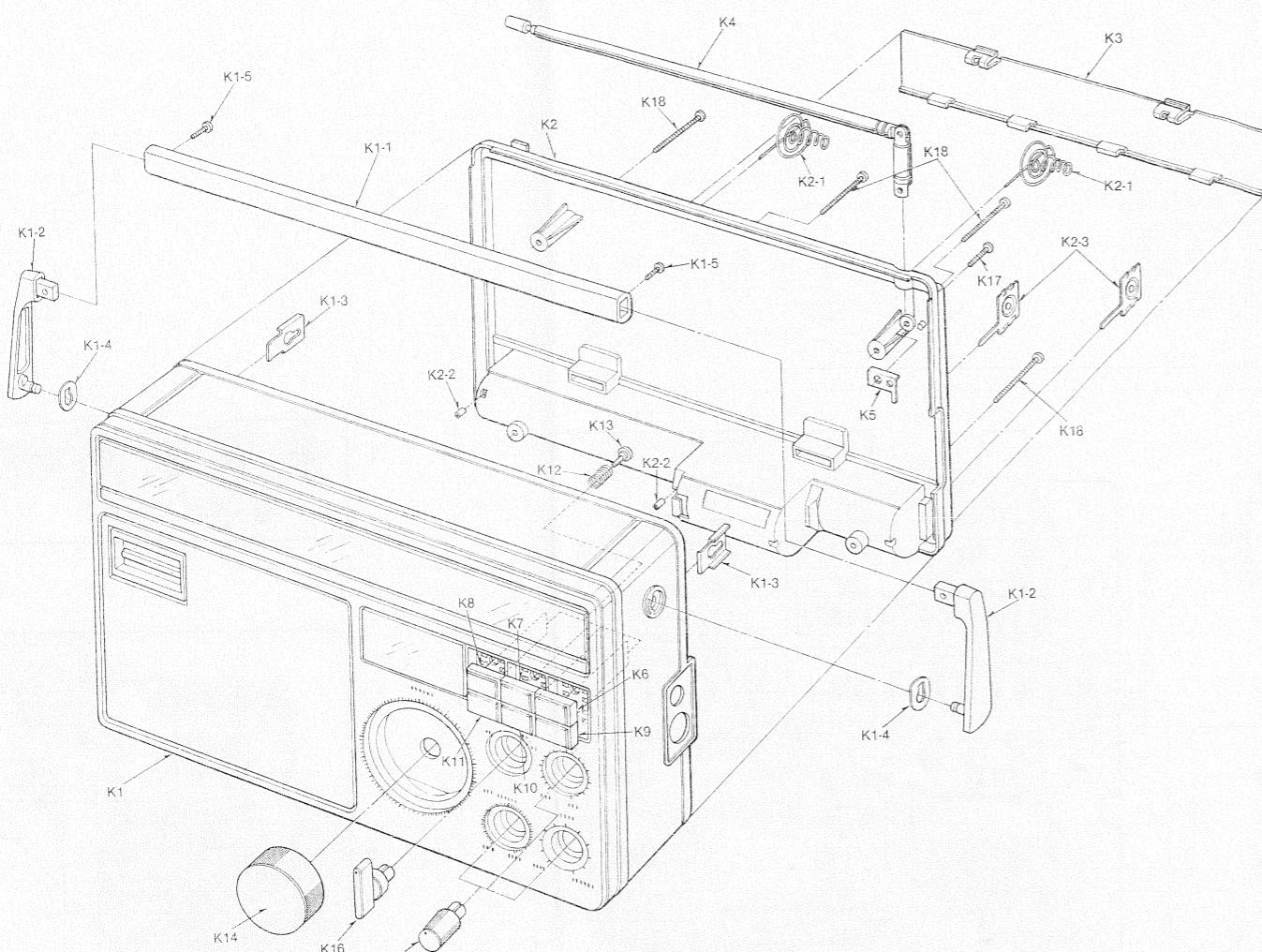
SCHEMATIC DIAGRAM MODEL RF-1410LBS



CIRCUIT BOARD WIRING VIEW MODEL RF-1410LBS

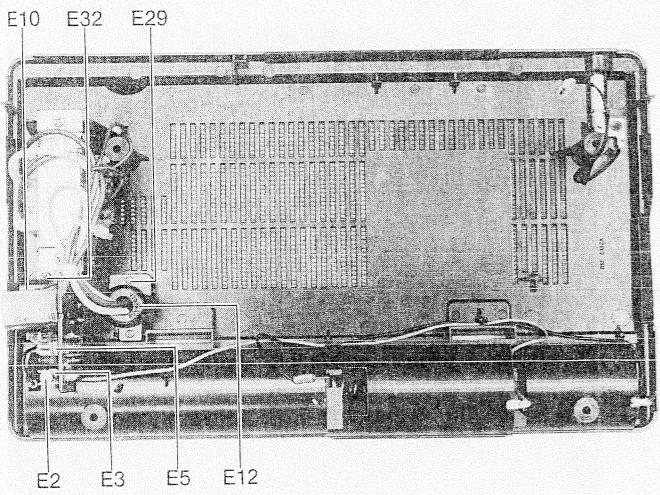


CABINET PARTS

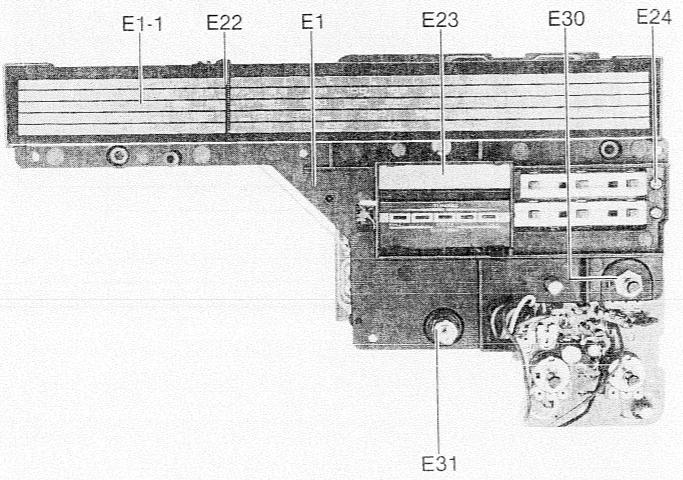


[Fig. 13]

ELECTRICAL PARTS



[Fig. 14]

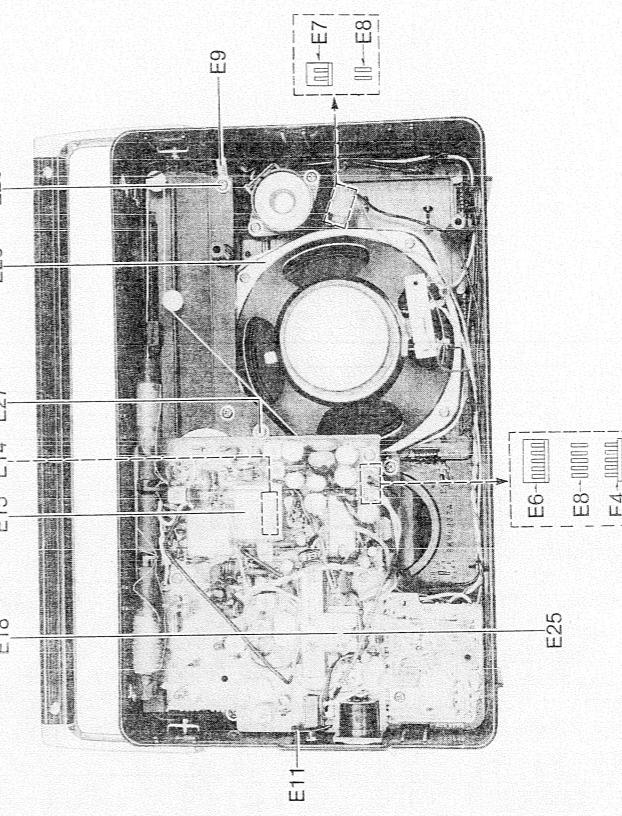


[Fig. 15]

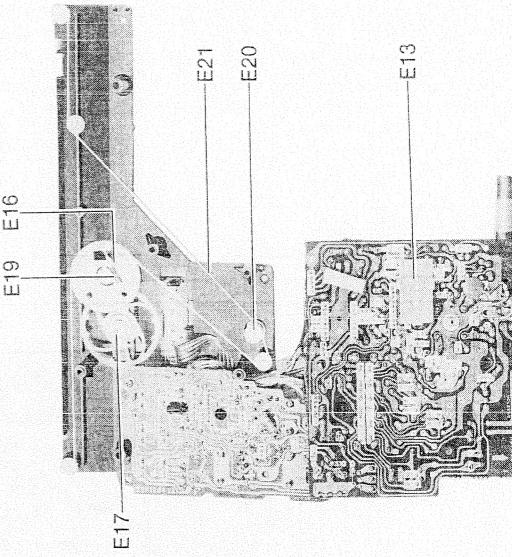
REPLACEMENT PARTS LIST Model RF-1410LBS
(RD8006-5105C)

NOTES: 1. Δ indicates that only parts specified by the manufacturer be used for safety.
2. The S mark indicates service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
INTEGRATED CIRCUITS, TRANSISTORS AND DIODES				
IC1	AN7220A	IC	1	
IC2	RVILLA4125T	IC	1	
IC3	LB1405	IC	1	
Q1, 2, 3,	2SC1675	Transistor (Si)	5	
Q5, 6	2SK104	Transistor (Si)	1	
Q4	2SC945	Transistor (Si)	3	
Q7, 8, 9	RVDSD113	Diode (Si)	2	S
D1, 2	RVDRD5RIEB3	Diode (Si)	1	
D3	RVDKB262C	Diode (Si)	1	
D4	RADSLPL010	LED (Ga)	1	
D5~9	RVDW06B	Diode (Si)	4	
D10~13	RVDW06B	Diode (Si)	4	
COILS AND TRANSFORMERS				
L1	BLD4Y44	Tuning Coil, FM	1	
L2	BLD4Y53	Oscillator Coil, FM	1	
L5, 6	BLF6F151	Antenna Coil, LW, MW	1	
L7	BLA3M10	Antenna Coil, SW	1	
L8	BL01M4	Oscillator Coil, LW	1	
L9	BL02M6	Oscillator Coil, MW	1	
L10	BL03M31	Oscillator Coil, SW	1	
T1, 4	BLI4M101	IPT, FM	2	S
T2	BLI2M216	IPT, AM	1	
T3	BLI2M217	IPT, AM	1	
T5	BLT5K136	Power Transformer	1	Δ
VARIABLE RESISTORS				
VRL1, 3	EVH0XAFL15A14	Variable Resistor, 10kΩ (A)	2	
VR2	EVH0XAFL15A54	Variable Resistor, 50kΩ (A)	1	
VR4, 6	EVNM4AA00B15	Variable Resistor, 100kΩ (B)	2	S
VR5	EVNK4AA00B24	Variable Resistor, 20kΩ (B)	1	
VARIABLE CAPACITORS				
C4, 11,	RCV4RC2V1L	Tuning Capacitor, w/Trimmer Capacitor CT5~8	1	
C24, 27	RCV2T~16M	Trimmer Capacitor	2	
CTR1~4				
CERAMIC FILTERS				
CF1, 2	RVFSFE10/MSR	Ceramic Filter	2	
CF3	RVFCFM245/SD	Ceramic Filter	1	
COMPONENT COMBINATION				
Z1	RXABPWB5	Component Combination	1	



[Fig. 16]



[Fig. 17]

